Computing for Human Services

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Chapter 36

Speech Codec for Voice over IP (VoIP) Systems

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36.1. Introduction

Voice over IP is a significant part of the convergence of voice and data communications. As broadband booms, and technology evolve. People now want to communicate through various ways not just voices such as email, instant messaging, video and so on. Traditional telephony cannot evolve as quickly as the demand and develop new feature on circuit switch takes much time and money. VoIP handles voice in a packet rather than a circuit switched environment. VoIP stands for 'Voice over Internet Protocol. As the term says VoIP tries to let go voice (mainly human) through IP packets and, in definitive through Internet. VoIP can use accelerating hardware to achieve this purpose and can also be used in a PC environment. Voice over IP (VoIP) offers many unique capabilities to its users. An important driving force behind the use of IP telephony is cost savings, especially for corporations with large data networks. By carrying voice traffic over IP-based networks, companies can reduce or eliminate the toll charges associated with transporting calls over the Public Switched Telephone Network (PSTN). Other benefits taking advantage of advancements in IP-Telephony include the integration of voice and data applications and the flexibility of creating new services rapidly and with lower complexity. Two standards have recently emerged to provide services that are well known to traditional telephony as well as offer mechanisms to support the implementation and integration of new features. These include H.323 and the Session Initiation Protocol (SIP) standardized by the ITU-T and the IETF respectively

This chapter reviews the digitizing and packetizing of an analogue signal in addition to the routing and transmission of packets through a TCP/IP network.

First, the client makes a call request, the server responses this request. Then, the client begins to speak. In the client side, the voice gets recorded and encoded, then get transmitted to the decoder on the server side. Then it get decoded and played back in the server side. To realize